



Objectives for Human Missions to NEOs

Moon/Mars Synergies

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Magnitude of Findings



Theme	Number of Objectives
Demonstrate Deep Space Capabilities	35
Scientific Research	30
Planetary Defense	17
Other	0

- Overarching observations

Deep Space Capabilities Theme: Key Observations



- Objectives
 - Demonstrating a Sustainable Deep Space Transportation Architecture
 - Demonstrating Technologies needed for Deep Space Exploration including Radiation Shielding / Hazards, Closed Loop Eclss, Power, ISRU, Microgravity Effects
 - Demonstrating Operational Capabilities needed for Deep Space Exploration
 - Advancing a Political Agenda
 - Investigate/Assess Potential for Commercial Activity
 - Understand the Psycho-Social Interactions
 - Micro-Meteorite Environment
 - Resources
 - EPO/Participatory Exploration
- Activities
 - ISRU Demonstration
 - Stay Alive
 - Local Decision Making to ensure Tech Demos and demonstrate Autonomous Operations
 - Demonstrate Teleoperations
 - Public Engagement / PSA
 - Vehicle Inspection and Maintenance
- Target Characteristics
 - Good Resource Characteristics (water and metal)

Scientific Research Theme: Key Observations



- Objectives
 - Sample Return
 - Internal Structure Assessment
 - Space Environment Assessment
 - Total Global Geologic Context (provenance)
- Activities
 - Emplacement of Instruments on Surface (EG Seismic Net)
 - Sampling of Asteroid in various locations
 - Tele-robotic Operations
 - Geologic Mapping
 - Localized Remote Sensing
 - Site Selection (fine and gross)
- Target Characteristics
 - Primitive, Volatile, Rich
 - Big
 - Slow spin

Planetary Defense Theme: Key Observations



- Objectives
 - Orbit Dynamics Pre and Post Mitigation Activities
 - Composition and Internal Structure
 - Experiments for Deflecting NEO
 - Telescopic Survey of Population
 - Correlate in situ measurements with Earth based Remote Sensing
- Activities
 - Measure orbit of NEO BEFORE and AFTER Kinetic impact
 - Measure Internal Structure
 - Measure Effectiveness of Mitigation Strategies
 - Public Outreach to Communicate Relevance of Objectives
- Target Characteristics
 - Potentially Hazardous Asteroid



Backup

Parking Lot



- Optional chart

Possible Breakout Discussions for Tomorrow



- Optional Chart